WHAT IS CLAIMED IS:

1. A polymer comprising one or more silicon-containing groups, wherein the polymer is derived from a compound of the formula:

$$Y\text{-}R^1\text{-}Si(R^2)_2\text{-}[\text{-}Z\text{-}Si(R^2)_2\text{-}]_n\text{-}R^1\text{-}Y$$

wherein:

each Y is independently OH or NR^4H;

n = 2 or more;

each R^1 is independently a straight chain or branched alkylene group optionally including heteroatoms;

each R^2 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is oxygen or R^3, wherein each R^3 is independently a straight chain alkylene group, a phenylene group, or a straight chain or branched alkyl substituted phenylene group, wherein each R^3 optionally includes heteroatoms; and

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof;

with the proviso that at least one of the Z groups is oxygen and at least one of the Z groups is R^3; and

with the proviso that R^1 does not include urethane groups when Y is OH.

2. The polymer of claim 1 comprising urethane linkages.

3. The polymer of claim 1 wherein n = 2 to 50.

4. The polymer of claim 1 wherein each R^1 is independently a straight chain or branched (C3-C20)alkylene group.

5. The polymer of claim 1 wherein Y is NH_2.

6. The polymer of claim 1 wherein each R^2 is independently a straight chain or branched (C1-C20)alkyl group.

7. The polymer of claim 6 wherein each R^2 is independently a straight chain or branched (C1-C3)alkyl group.

8. The polymer of claim 1 wherein each R^2 is independently a phenyl group or a straight chain or branched (C1-C20)alkyl substituted phenyl group.

9. The polymer of claim 8 wherein each R^2 is independently a phenyl group or a straight chain or branched (C1-C6)alkyl substituted phenyl group.

10. The polymer of claim 1 wherein each R^3 is independently a straight chain (C1-C20)alkylene group.

11. The polymer of claim 10 wherein each R^3 is independently a straight chain (C4-C12)alkylene group.

12. The polymer of claim 11 wherein each R^3 is independently a straight chain (C6-C10)alkylene group.

13. The polymer of claim 1 wherein each R^3 is independently a phenylene group or a straight chain or branched (C1-C20)alkyl substituted phenylene group.

14. The polymer of claim 1 wherein each R^3 is independently a phenylene group or a straight chain or branched (C1-C6)alkyl substituted phenylene group.

15. The polymer of claim 1 wherein each Y is OH.

16. The polymer of claim 1 wherein each R^4 is independently H or a straight chain alkyl group.

17. The polymer of claim 1 which is a segmented polyurethane.

18. The polymer of claim 1 which is a biomaterial.

19. The polymer of claim 1 which is substantially free of ether, ester, and carbonate linkages.

20. The polymer of claim 1 which is linear, branched, or crosslinked.

21. The polymer of claim 1 wherein every other Z is oxygen.

22. The polymer of claim 1 further comprising one or more soft segments derived from a diol that does not contain a silicon-containing group.

23. The polymer of claim 1 further comprising one or more hard segments derived from a chain extender.

24. A medical device comprising a polymer comprising one or more silicon-containing groups, wherein the polymer is derived from a compound of the formula:

$$Y\text{-}R^1\text{-}Si(R^2)_2\text{-}[\text{-}Z\text{-}Si(R^2)_2\text{-}]_n\text{-}R^1\text{-}Y$$

wherein:

each Y is independently OH or NR^4H;

n = 2 or more;

each R^1 is independently a straight chain or branched alkylene group optionally including heteroatoms;

each R^2 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is oxygen or R^3, wherein each R^3 is independently a straight chain alkylene group, a phenylene group, or a straight chain or branched alkyl substituted phenylene group, wherein each R^3 optionally includes heteroatoms; and

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof;

with the proviso that at least one of the Z groups is oxygen and at least one of the Z is R^3; and

with the proviso that R^1 does not include urethane groups when Y is OH.

25. The medical device of claim 24 wherein the polymer comprises urethane linkages.

26. The medical device of claim 24 wherein n = 2 to 50.

27. The medical device of claim 24 wherein each R^1 is independently a straight chain or branched (C3-C20)alkylene group.

28. The medical device of claim 24 wherein Y is NH_2.

29. The medical device of claim 24 wherein each R^2 is independently a straight chain or branched (C1-C20)alkyl group.

30. The medical device of claim 29 wherein each R^2 is independently a straight chain or branched (C1-C3)alkyl group.

31. The medical device of claim 24 wherein each R^2 is independently a phenyl group or a straight chain or branched (C1-C20)alkyl substituted phenyl group.

32. The medical device of claim 31 wherein each R^2 is independently a phenyl group or a straight chain or branched (C1-C6)alkyl substituted phenyl group.

33. The medical device of claim 24 wherein each R^3 is independently a straight chain (C1-C20)alkylene group.

34. The medical device of claim 33 wherein each R^3 is independently a straight chain (C4-C12)alkylene group.

35. The medical device of claim 34 wherein each R^3 is independently a straight chain (C6-C10)alkylene group.

36. The medical device of claim 24 wherein each R^3 is independently a phenylene group or a straight chain or branched (C1-C20)alkyl substituted phenylene group.

37. The medical device of claim 36 wherein each R^3 is independently a phenylene group or a straight chain or branched (C1-C6)alkyl substituted phenylene group.

38. The medical device of claim 24 wherein each Y is OH.

39. The medical device of claim 24 wherein each R^4 is independently H or a straight chain alkyl group.

40. The medical device of claim 24 wherein the polymer is a segmented polyurethane.

41. The medical device of claim 24 wherein the polymer is a biomaterial.

42. The medical device of claim 24 wherein the polymer is substantially free of ether, ester, and carbonate linkages.

43. The medical device of claim 24 wherein the polymer is linear, branched, or crosslinked.

44. The medical device of claim 24 wherein every other Z is oxygen.

45. The medical device of claim 24 wherein the polymer further comprises one or more soft segments derived from a diol that does not contain a silicon-containing group.

46. The medical device of claim 24 wherein the polymer further comprises one or more hard segments derived from a chain extender.

47. A polymer comprising one or more silicon-containing groups, wherein the polymer comprises a group of the formula:

$$-R^1-Si(R^2)_2-[-Z-Si(R^2)_2-]_n-R^1-$$

wherein:

n = 2 or more;

each R^1 is independently a straight chain or branched alkylene group optionally including heteroatoms;

each R^2 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is oxygen or R^3, wherein each R^3 is independently a straight chain alkylene group, a phenylene group, or a straight chain or branched alkyl substituted phenylene group, wherein each R^3 optionally includes heteroatoms; and

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof;

with the proviso that at least one of the Z groups is oxygen and at least one of the Z groups is R^3; and

with the proviso that R^1 does not include urethane groups.

48. A medical device comprising a polymer comprising one or more silicon-containing groups, wherein the polymer comprises a group of the formula:

$$-R^1-Si(R^2)_2-[-Z-Si(R^2)_2-]_n-R^1-$$

wherein:

n = 2 or more;

each R^1 is independently a straight chain or branched alkylene group optionally including heteroatoms;

each R^2 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is oxygen or R^3, wherein each R^3 is independently a straight chain alkylene group, a phenylene group, or a straight chain or branched alkyl substituted phenylene group, wherein each R^3 optionally includes heteroatoms; and

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof;

with the proviso that at least one of the Z groups is oxygen and at least one of the Z groups is R^3; and

with the proviso that R^1 does not include urethane groups.

49. A compound comprising one or more silicon-containing groups, wherein the compound is of the formula:

$$Y\text{-}R^1\text{-}Si(R^2)_2\text{-}[\text{-}Z\text{-}Si(R^2)_2\text{-}]_n\text{-}R^1\text{-}Y$$

wherein:

each Y is independently OH or NR^4H;

n = 2 or more;

each R^1 is independently a straight chain or branched alkylene group optionally including heteroatoms;

each R^2 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is oxygen or R^3, wherein each R^3 is independently a straight chain alkylene group, a phenylene group, or a straight chain or branched alkyl substituted phenylene group, wherein each R^3 optionally includes heteroatoms; and

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof;

with the proviso that at least one of the Z groups is oxygen and at least one of the Z groups is R^3; and

with the proviso that R^1 does not include urethane groups when Y is OH.

50. The polymer of claim 49 wherein each R^1 is independently a straight chain or branched (C3-C20)alkylene group.

51. The polymer of claim 49 wherein each R^2 is independently a straight chain or branched (C1-C20)alkyl group.

52. The polymer of claim 49 wherein each R^2 is independently a phenyl group or a straight chain or branched (C1-C20)alkyl substituted phenyl group.

53. The polymer of claim 49 wherein each R^3 is independently a straight chain (C1-C20)alkylene group.

54. The polymer of claim 49 wherein each R^3 is independently a phenylene group or a straight chain or branched (C1-C20)alkyl substituted phenylene group.

55. A method of making a segmented polymer, the method comprising: combining a polyisocyanate with a compound of the formula:

$$Y\text{-}R^1\text{-}Si(R^2)_2\text{-}[\text{-}Z\text{-}Si(R^2)_2\text{-}]_n\text{-}R^1\text{-}Y$$

wherein:

each Y is independently OH or NR^4H;

n = 2 or more;

each R^1 is independently a straight chain or branched alkylene group optionally including heteroatoms;

each R^2 is independently a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof, optionally including heteroatoms;

Z is oxygen or R^3, wherein each R^3 is independently a straight chain alkylene group, a phenylene group, or a straight chain or branched alkyl substituted phenylene group, wherein each R^3 optionally includes heteroatoms; and

each R^4 is independently H or a saturated or unsaturated aliphatic group, an aromatic group, or combinations thereof;

with the proviso that at least one of the Z groups is oxygen and at least one of the Z groups is R^3; and

with the proviso that R^1 does not include urethane groups when Y is OH.